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GE
Sensing & Inspection Technologies

Druck DPI 705/DPI 705 IS Series

Digital Pressure Indicator

User Manual K0214

English 1 - 6

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GE Druck

EC Declaration of Conformity

Product: **DPI 705, 705 (IS) DIGITAL PRESSURE INDICATOR**

The above product(s) meets the protection requirements of the relevant EC Directives.

Supplier: **Druck Ltd., Fir Tree Lane, Groby, Leicester LE6 0FH.**
Tel: +44 (0) 116 231 7100 Fax: +44 (0) 116 231 7101

Signed: R Jones **Date:** 3rd December 2008
For and on behalf of Druck Limited

Name: R. Jones **Position:** **Group Engineering Director**

Relevant European Directives	
Directive Name	**Directives**
Low Voltage Directive	2006/95/EC
Electromagnetic Compatibility	2004/108/EC
Pressure Equipment Directive	97/23/EC (Category SEP)
Potentially Explosive Atmospheres	94/9/EC †

† The ATEX directive only applies to instruments marked with BAS02ATEX1194

Standards	
Standard Name	**Standard**
Safety requirements for electrical equipment for measurement, control and laboratory use	EN61010-1:1993
Electromagnetic Compatibility	EN50081-1:1992 and EN50082-2:1995
Electrical apparatus for explosive atmospheres - General Requirements	EN60079-0:2006 ‡
Electrical apparatus for potentially explosive atmospheres intrinsic safety "i"	EN60079-11:2007 ‡
Explosive atmospheres. Equipment with equipment protection level (EPL) Ga	EN60079-26:2007 ‡

‡ These standards only apply to instruments marked with BAS02ATEX1194

CD0043 Issue 05A

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Approved Service Agents

For the list of service centres visit our web site:

Symbols

This equipment meets the requirements of all relevant European safety directives. The equipment carries the CE mark.

This symbol, on the instrument, indicates that the user should refer to the user manual.

Do not dispose of this product as household waste. Use an approved organisation that collects and/or recycles waste electrical and electronic equipment. For more information:

Contact us at www.gesensinginspection.com

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English

DPI 705 Series Digital Pressure Indicator

Introduction

The Druck DPI 705 pressure indicator uses a micro-machined silicon transducer to produce a pressure reading in units of pressure measurement. These user instructions include the operations for all DPI 705 Pressure Indicators, safety instructions and the requirements for intrinsically safe instruments.

Specification

Accuracy:

Combined non-linearity, hysteresis and repeatability ..... ±0.1% full-scale (FS)
Temperature effects: Span ..... ±0.02%rdg/°C
Zero ..... <= 1 bar ±0.05%FS/°C (absolute ranges only)
..... > 1 bar ±0.02%FS/°C (absolute ranges only)
Operating range ..... -10°C to 50°C (15°F to 120°F)
Storage range ..... -20°C to 60°C (-5°F to 140°F)
Maximum safe working pressure ..... 2 x full-scale
Pressure connector ..... 6 mm o/d and 4 mm i/d hose,
..... G1/8 or 1/8"NPT female thread
Maximum torque ..... 2.259 Nm (20 lb. in)
Environmental ..... IP54 (NEMA 12)
Electrical safety ..... BS EN 61010 as applicable
Electromagnetic compatibility ..... EN50081-1 (emissions)
..... EN50082-2 (immunity)
Electrical Power Supply for non-certified units ..... 3 x 1.5 V alkaline size AA

Safety

This symbol, on the pressure indicator, indicates that the user should refer to the user guide or manual.

Pressure Do not apply pressure greater than the maximum safe working pressure.

Do not apply pressure greater than 1.1 bar (15.95 psi) absolute to the -ve pressure port of differential pressure indicators.

Batteries Remove batteries from the pressure indicator immediately when discharged and before storage.

Dispose of batteries in accordance with local regulations and battery manufacturers' instructions.

When storing and transporting batteries make sure they cannot be short circuited.

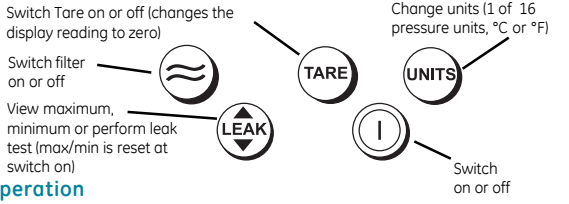
Cleaning Clean the pressure indicator with a damp cloth.

Calibration Refer to the Calibration and Configuration Instructions.

Software Version This manual contains operating instructions for pressure indicators with software version 1.02 onwards. Further changes to the pressure indicator's software may require a change to the operating instructions and an issue number change of the manual.

Display Symbols

Batteries are low, replace observing polarity shown on case	Filter applied (10 reading rolling average)
Displayed reading - maximum value	TARE Tare applied
Displayed reading - minimum value	A (flashing) Alarm - pressure value more than alarm setting
Displayed reading - leakage (per minute)	Leak test in progress (count down)


Switch Tare on or off (changes the display reading to zero)
Change units (1 of 16 pressure units, °C or °F)
Switch filter on or off
TARE
UNITS
View maximum, minimum or perform leak test (max/min is reset at switch on)
LEAK
Switch on or off

Operation

TIME OUT

If a key is not pressed within 10 minutes then the instrument times out and switches off. To disable this automatic time out, hold the LEAK key when switching on the pressure indicator.

LEAK TEST

To perform a leak test, press the LEAK key 3 times. The ⊕ symbol flashes on the display with the number 60. To start the leak test press the LEAK key again. The instrument counts down 60 seconds displaying the leakage at the end of the 60 second period. Press the LEAK key at any time during the leak test to quit and return to normal measurement.

ZERO

A zero should be performed on gauge and differential instruments before measuring pressure. To perform a zero: Open all pressure ports to atmospheric pressure. Press the ≈ and TARE keys together, the display briefly shows ZErO and the instrument calculates a new zero.

Note: *A zero can only be performed on absolute pressure indicators if a vacuum is first applied to the pressure port.*

Alarm

A single alarm can be set to operate when the displayed pressure value rises above the alarm setting. The alarm causes the display to flash and a beeper to sound for one minute. Pressing TARE and UNITS keys together displays the alarm value, pressing the FILTER key increases the alarm value, pressing the UNITS key decreases the alarm value. When the display shows the required alarm value, press the TARE key to set the alarm.

English

Intrinsically Safe Pressure Indicators

Introduction

These instructions detail the requirements for using the DPI 705 Intrinsically Safe Pressure Indicator in a hazardous area. Read the whole publication before starting.

Special note

This instrument has been certified by ATEX and CSA. The batteries certfiied for use by each certifying body are different. It is the user's responsibility to use the correct batteries.

Installation Requirements in Hazardous Areas

ATEX Certification

Markings:

Ex ia IIC T4 Ga (-10°C ≤ Ta ≤ +50°C) ..... hazardous location markings
BAS02ATEX1194 ..... certificate number

..... equipment group and category

..... CE mark

DPI 705 IS ..... specific apparatus type
Pressure range in mbar or psi ..... full-scale pressure rating
Druck LTD, Groby, LE6 0FH, UK ..... manufacturer's name and address
SN*****/YY-MM ..... serial number and date of manufacture, year-month**

Requirements and Conditions

Batteries

WARNING: Only replace batteries in a safe area

- Power supply only use 3 x LR6 (AA), Duracell PROCELL, Duracell PLUS, ENERGIZER ULTIMATE or GP SUPERALKALINE.

Installation

WARNING: Do not use tools on the pressure indicator that might cause incendive sparks - this can cause an explosion.

- Installation should be carried out by qualified plant installation technicians in compliance with the latest issue of EN 60079-14.
- Provide additional protection for indicators that may be damaged in service.

Declaration Requirements

The DPI 705 IS is designed and manufactured to meet the essential health and safety requirements not covered by EC Type Examination Certificate BAS02ATEX1194 when installed as detailed above.

This intrinsically safe instrument is designed and manufactured to protect against other hazards as defined in paragraph 1.2.7 of Annex II of the ATEX Directive 94/9/EC.

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CSA Certification

Markings:

Ex ia IIC T4, Class 1, Zone 0 and Class 1, Div.1
Groups A, B, C & D ..... hazardous location designation
1999 LR110032-3 ..... certificate reference
Amb Temp -10°C to +50°C ..... ambient temperature range

..... CSA monogram

DPI 705 IS ..... specific apparatus type
Pressure range in mbar or psi ..... full-scale pressure rating
Druck LTD, Groby, LE6 0FH, UK ..... manufacturer's name and address
SN****/YY-MM ..... serial number and date of manufacture, year-month**

Requirements and Conditions

Batteries

WARNING: **Only replace batteries in a safe area**

- Power supply use only 3 x LR6 (AA) made by Eveready Energizer LR6, Varta 4006 or Duracell Procell MN1500.

Installation

WARNING: **Do not use tools on the pressure indicator that might cause incendive sparks - this can cause an explosion.**

- Installation should be carried out by qualified plant installation technicians in compliance with the latest issue of Canadian Electrical Code (CEC).
- Provide additional protection for indicators that may be damaged in service.

Maintenance

Note: *The following applies to all instruments of the DPI 705 Series.*

- Return the instrument to the factory for any repairs, it cannot be repaired on-site.
- To keep the DPI 705 accurate to 0.1% full-scale a calibration check should be carried out once per year.

Cleaning

- Clean the instrument case with a moist, lint-free cloth and weak detergent.

English

Calibration Instructions

WARNING: CALIBRATE DPI 705 IS INSTRUMENTS IN A SAFE AREA.

The instrument performs a two-point compensation at ZErO and FS (full-scale.)

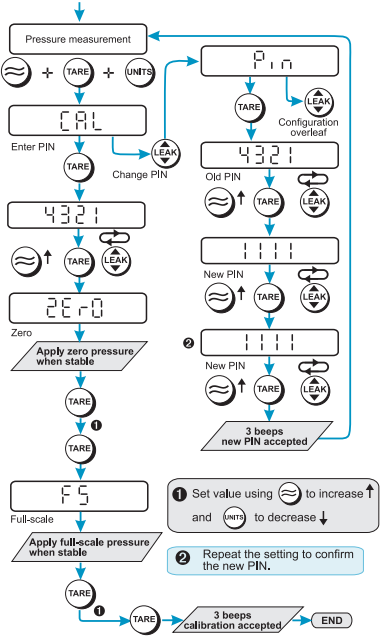
Preparation

1.
Connect the instrument to a pressure source that has an accuracy three times better than the instrument.
Recommended:-
Druck DPI 610 or DPI 610 IS Portable Calibrator.

2.
Switch on the instrument and select the units of pressure measurement required for calibration.

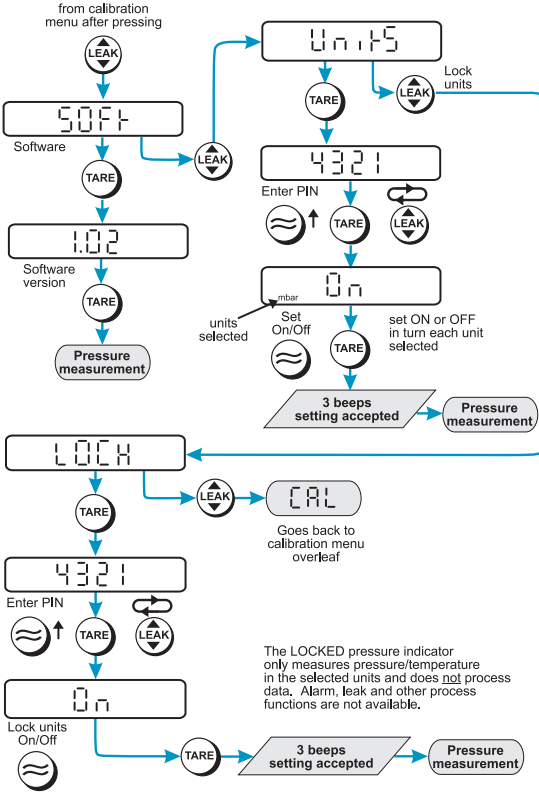
Procedure

1.
Press all three keys together to enter the CAL menu and proceed as shown:



Changing the PIN
Each digit can be changed in turn.
Pressing:

- increases the value of the digit.
- LEAK steps to next digit, left to right.
- TARE enters the PIN



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